

1 1. A substantially pure polypeptide comprising an
2 amino acid sequence at least 60% identical to SEQ ID NO:2,
3 wherein the polypeptide induces differentiation of an
4 osteocyte.

1 2. The polypeptide of claim 1, wherein the amino
2 acid sequence is at least 70% identical to SEQ ID NO:2.

1 3. The polypeptide of claim 1, wherein the amino
2 acid sequence is at least 80% identical to SEQ ID NO:2.

1 4. The polypeptide of claim 1, wherein the amino
2 acid sequence is at least 90% identical to SEQ ID NO:2.

1 5. A substantially pure polypeptide comprising SEQ
2 ID NO:2.

1 6. The polypeptide of claim 5, wherein the
2 polypeptide comprises SEQ ID NO:1.

1 7. A substantially pure polypeptide comprising the
2 amino acid sequence of SEQ ID NO:2 containing up to 30
3 conservative amino acid substitutions, wherein the
4 polypeptide induces differentiation of an osteocyte.

1 8. A substantially pure polypeptide encoded by a
2 first nucleic acid that hybridizes under stringent conditions
3 to a second nucleic acid consisting of SEQ ID NO:3, wherein
4 the polypeptide induces differentiation of an osteocyte.

1 9. An isolated nucleic acid encoding the polypeptide
2 of claim 1.

1 10. An isolated nucleic acid encoding the
2 polypeptide of claim 5.

1 11. An isolated nucleic acid encoding the
2 polypeptide of claim 6.

1 12. An isolated nucleic acid encoding the
2 polypeptide of claim 7.

1 13. An isolated nucleic acid comprising SEQ ID NO:3.

1 14. An isolated nucleic acid that hybridizes under
2 stringent conditions to a single stranded nucleic acid
3 consisting of SEQ ID NO:3.

1 15. The isolated nucleic acid of claim 14, wherein
2 the nucleic acid encodes a polypeptide that induces
3 differentiation of an osteocyte.

1 16. A vector comprising the nucleic acid of claim 9.

1 17. A vector comprising the nucleic acid of
2 claim 10.

1 18. A vector comprising the nucleic acid of
2 claim 11.

1 19. A vector comprising the nucleic acid of
2 claim 12.

1 20. A vector comprising the nucleic acid of
2 claim 13.

1 21. A vector comprising the nucleic acid of
2 claim 14.

1 22. A host cell comprising the nucleic acid of
2 claim 9.

1 23. A host cell comprising the nucleic acid of
2 claim 10.

1 24. A host cell comprising the nucleic acid of
2 claim 11.

1 25. A host cell comprising the nucleic acid of
2 claim 12.

1 26. A host cell comprising the nucleic acid of
2 claim 13.

1 27. A host cell comprising the nucleic acid of
2 claim 14.

1 28. An antibody that specifically binds to the
2 polypeptide of claim 1.

1 29. An antibody that specifically binds to the
2 polypeptide of claim 5.

1 30. An antibody that specifically binds to the
2 polypeptide of claim 8.

1 31. A method of screening for a compound that binds
2 to a polypeptide, the method comprising

3 providing a polypeptide comprising an amino acid
4 sequence at least 70% identical to SEQ ID NO:2;
5 contacting a test compound with the polypeptide; and
6 determining whether the test compound has bound to
7 the polypeptide.

1 32. A method of screening for a compound that binds
2 to a polypeptide, the method comprising

3 providing a polypeptide encoded by a first nucleic
4 acid that hybridizes under stringent conditions to a second
5 nucleic acid consisting of SEQ ID NO:3;

6 contacting a test compound with the polypeptide; and
7 determining whether the test compound has bound to
8 the polypeptide.

1 33. A method of screening for a compound that
2 induces osteocyte differentiation, the method comprising

3 providing a polypeptide comprising an amino acid
4 sequence at least 70% identical to SEQ ID NO:2;

5 contacting a test compound with the polypeptide; and

6 determining whether the ability of the polypeptide to
7 induce osteocyte differentiation in the presence of the test
8 compound is greater than in the absence of the test compound,
9 wherein if the ability is greater, the test compound induces
10 osteocyte differentiation.

1 34. A method of screening for a compound that

2 induces osteocyte differentiation, the method comprising

3 providing a polypeptide encoded by a first nucleic

4 acid that hybridizes under stringent conditions to a second
5 nucleic acid consisting of SEQ ID NO:3;

6 contacting a test compound with the polypeptide; and

7 determining whether the ability of the polypeptide to
8 induce osteocyte differentiation in the presence of the test
9 compound is greater than in the absence of the test compound,
10 wherein if the ability is greater, the test compound induces
11 osteocyte differentiation.

1 35. A method of screening for a compound that
2 inhibits osteocyte differentiation, the method comprising
3 providing a polypeptide comprising an amino acid
4 sequence at least 70% identical to SEQ ID NO:2;
5 contacting a test compound with the polypeptide; and
6 determining whether the ability of the polypeptide to
7 induce osteocyte differentiation in the presence of the test
8 compound is less than in the absence of the test compound,
9 wherein if the ability is less, the test compound inhibits
10 osteocyte differentiation.

1 36. A method of screening for a compound that
2 inhibits osteocyte differentiation, the method comprising
3 providing a polypeptide encoded by a first nucleic
4 acid that hybridizes under stringent conditions to a second
5 nucleic acid consisting of SEQ ID NO:3;
6 contacting a test compound with the polypeptide; and
7 determining whether the ability of the polypeptide to
8 induce osteocyte differentiation in the presence of the test
9 compound is less than in the absence of the test compound,
10 wherein if the ability is less, the test compound inhibits
11 osteocyte differentiation.

1 37. A compound that specifically binds to the
2 polypeptide of claim 1.

1 38. The compound of claim 37, wherein the compound
2 is an agonist or antagonist of the polypeptide.

1 39. A compound that specifically binds to the
2 polypeptide of claim 5.

1 40. The compound of claim 39, wherein the compound
2 is an agonist or antagonist of the polypeptide.